

MODIS IOT Weekly Report

Mission Operations Days: 2000/288 to 2000/294

October 13, 2000 20:00:00 GMT to October 20, 2000 20:00:00 GMT

Note: SMIR Itwk/Vdet were set to 79/110 from 291/15:33:32 to 291/17:27:04
and 292/19:43:00 to 294/13:29:13.

Terra Spacecraft and MODIS Instrument Status:

Terra (AM-1) is in Normal Mode

MODIS is in Science Mode

Blackbody	A On; B Off	Nominal
Calibration Electronics	A On; B Off	Nominal
Control Processor	A On; B Off	Nominal
Door: Nadir	Unlatched, open	Nominal
Space View	Unlatched, open	Nominal
Solar Diffuser	Unlatched, closed	Nominal
FDDI Formatter	A On; B off	Nominal
FIFO Memory	1 & 2 On; 3 & 4 Off	Nominal
Format Processor	A On; B off	Nominal
PC FPA	A On	Nominal
Power Supply:1	On	Nominal
2	Off	Nominal
PV FPAs: VIS	A On	Nominal
NIR	A On	Nominal
SMIR	A On	Nominal
LWIR	A On	Nominal
Radiative Cooler:		
Outgas Heaters	Off	Nominal
LWIR FPA Heater	On	Nominal
SMIR FPA Heater	Off	Nominal
Scan Assembly	A On; B off	Nominal
SDSM	Off	Nominal
SRCA	Off	Filter wheel at step 100
Survival Heaters: PS1	Enabled	Nominal
PS2	Enabled	Nominal
Timing Generator	A On; B Off	Nominal
Flight Software	Rev BD + 2 patches	Nominal
Inhibit Ids Set	54	Nominal
TMONs enabled	66, 67, 68	Nominal

This Week's Completed MODIS Activities:

Saturday, October 14, 2000

None

Sunday, October 15, 2000

None

Monday, October 16, 2000

None

Tuesday, October 17, 2000

Roll Maneuver #1:

291/14:29:51	ATC	Move Formatter to Night ahead by 3:23 to ensure 50/50 day/night
291/15:02:17	ATC	Set Formatter to Day Rate
291/15:02:19	ATC	Set SCIABNORM Flag to ABNORM
291/15:02:21	ATC	PC DC Restore to OFF
291/15:02:23	ATC	PV DC Restore to OFF
291/15:02:25	ATC	Sector Rotation to -3072 (EA to SV and OBCs)
291/15:08:55	ATC	Sector Rotation to Zero (Normal)
291/15:08:57	ATC	PC DC Restore to ON
291/15:08:59	ATC	PV DC Restore to ON
291/15:09:01	ATC	Set SCIABNORM Flag to NORM
291/15:09:03	ATC	Set Formatter to Night Rate
291/15:26:03	ATC	Move Formatter to Day later by 3:23 to ensure 50/50 day/night

291/15:33:32 Real-Time Set SMIR Itwk/Vdet to 79/110

Roll Maneuver #2:

291/16:08:45	ATC	Move Formatter to Night ahead by 3:23 to ensure 50/50 day/night
291/16:41:37	ATC	Set Formatter to Day Rate
291/16:41:39	ATC	Set SCIABNORM Flag to ABNORM
291/16:41:41	ATC	PC DC Restore to OFF
291/16:41:43	ATC	PV DC Restore to OFF
291/16:41:45	ATC	Sector Rotation to -3072 (EA to SV and OBCs)
291/16:48:15	ATC	Sector Rotation to Zero (Normal)
291/16:48:17	ATC	PC DC Restore to ON
291/16:48:19	ATC	PV DC Restore to ON
291/16:48:21	ATC	Set SCIABNORM Flag to NORM
291/16:48:23	ATC	Set Formatter to Night Rate
291/17:04:56	ATC	Move Formatter to Day later by 3:23 to ensure 50/50 day/night

291/17:27:04 Real-Time Set SMIR Itwk/Vdet to 110/226

Wednesday, October 18, 2000

292/19:43 Real-Time Set SMIR Itwk/Vdet to 79/110
292/20:05:00 ATC Blackbody to 315K
292/20:05:30 ATC Blackbody duty cycle to FULL

Thursday, October 19, 2000

293/03:00:00 ATC Blackbody to 270K
293/03:00:30 ATC Blackbody duty cycle to THIRD
293/16:05 Real-time Set Inhibit ID 37 (MODIS Formatter commands)
293/16:55 Real-time Set Formatter to Day Rate
293/16:56 Real-time Clear Inhibit ID 37 (MODIS Formatter commands)
293/22:00:00 ATC Blackbody to 290K
293/23:38:14 Real-time Set Inhibit ID 37 (MODIS Formatter commands)

Friday, October 20, 2000

294/00:34:55 Real-time Set Formatter to Night Rate
294/00:35:45 Real-time Clear Inhibit ID 37 (MODIS Formatter commands)
294/05:55:00 ATC PV Ecal
294/05:59:00 ATC PC Ecal
294/09:07:35 ATC OA-16: SD/SDSM Screened
294/10:46:28 ATC OA-15: SD/SDSM Open
294/13:29:13 Real-Time Set SMIR Itwk/Vdet to 110/226
294/14:04:15 ATC OA-16: SD/SDSM Screened
294/15:43:08 ATC OA-15: SD/SDSM Open

This Week's Scheduled MODIS Activities Not Completed:

290/21:56:02-22:53:33 ATC SRCA Full Spatial
TMON #66, SRCA A-side lamp current/voltage monitor tripped at the
beginning of the 30W portion of the macro.

The first attempt to capture 15 minutes of day rate data over ground-track night failed. During this time, 3 minutes of night rate data were recorded over ground-track day.

Upcoming MODIS Events:

No activities have been planned for the upcoming week.

Maneuvers:

The next delta-v maneuver is scheduled for November 1st, 2000.

MODIS Anomalies:

TMON #66, the MODIS SRCA A-side lamp current/voltage monitor tripped on day 290 shortly after beginning the 30W lamp portion of the macro. The TMON set the lamp usage to OFF, turned off the SRCA, and set inhibit ID #51 (MODIS SRCA commands). Because of this, the SRCA Filter wheel was left at step 100 rather than the home position.

A transient high current to the lamps appears to be a normal characteristic of the lamps. At this time, investigation is continuing to determine a possible correction to the TMON algorithm or alternate SRCA operating philosophy.

Continued monitoring for formatter errors and loss of cooler margin.

Attached to this report is a spreadsheet (FR_anomaly_log_102000.xls) listing the times, addresses, formatter temperature, satellite ground track, and space craft day/night position for a select number of the formatter events that have occurred since DOY 256. The current event count is 2507. Due to the high number of recent events, not all have been updated in the anomaly log.

General Instrument Comments:

MODIS is in Science Mode on the A-side with the SVD and NAD open, operating with the Formatter Resolution Flight Software Patches.

MODIS Telemetry Trends:

The Radiative Cooler intermediate stage temperature has slowly been increasing since approximately day 240. During this time the LWIR focal plane heater margin has been decreasing. The IOT is continuing to trend these telemetry mnemonics.

Non-MODIS Significant Events:

None.

Limited Life Item Status:

SRCA 10W Lamp #1: 173.5 of 500 hours
SRCA 10W Lamp #2: 135.9 of 500 hours
SRCA 10W Lamp #3: 145.1 of 500 hours
SRCA 10W Lamp #4: 61.5 of 500 hours

SRCA 1W Lamp #1: 556.1 of 4000 hours
SRCA 1W Lamp #2: 276.3 of 4000 hours

Solar Diffuser Door: 1441 of 3022 Movements
Nadir Aperture Door: 532 of 1316 Movements
Space View Door: 437 of 1316 Movements